UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,761	12/27/2001	Ioannis Pavlidis	H0002442-03	1894

128	7590	04/04/2005

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EXAMINER
LAVIN, CHRISTOPHER L

ART UNIT	PAPER NUMBER
2621	

DATE MAILED: 04/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/034,761	PAVLIDIS ET AL.
	Examiner	**Art Unit**	
	Christopher L Lavin	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>27 December 2001</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-25</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-25</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>01 May 2002</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>07/22/02;12/30/02</u>.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____ .

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2.   Claims 1 – 25 are rejected under 35 U.S.C. 102(b) as being anticipated by

Grimson et al ("Using adaptive tracking to classify and monitor activities in a site",

Proceedings 1998 IEEE Conference on Computer Vision and Pattern recognition, Santa

Barbara, CA, 1998 June 23 – 25; pages 22 – 29).

In regards to claim 11, Grimson discloses A system for use in monitoring a

search area, the system comprising a computer apparatus operable to (Figures 1 – 8, p.

24 first three paragraphs under section 3: For a system to perform the operations

described in this article including creating the images shown through the figures that

system must include a computer.): recognize object path data representative of at least

one object path of one or more moving objects in the search area (p. 23, last three

paragraphs: The object path is recorded as location, speed and direction.); recognize

one or more defined normal and/or abnormal object path feature models based on one

or more characteristics associated with normal, i.e., common activity, or abnormal, i.e.,

unusual events, object paths of moving objects (p. 26, first paragraph under section 5.1

and first two paragraphs under section 5.2); and compare the object path data to the

one or more defined normal and/or abnormal object path feature models for use in

determining whether the at least one object path is normal or abnormal (p. 26, first two paragraphs under section 5.2).

In regards to claim 12, The system of claim 11, wherein at least one of the one or more characteristics associated with normal or abnormal object paths comprises the trajectory thereof (p. 23, last three paragraphs: Trajectory is defined by location, speed and direction.).

In regards to claim 13, The system of claim 11, wherein the one or more defined normal and/or abnormal object path feature models comprise one or more defined normal object path feature models based on one or more characteristics associated with normal object paths, wherein the computer apparatus is further operable to compare the object path data to the one or more defined normal object path feature models to determine whether the at least one object path is normal, and further wherein the system comprises an alarm device operable to provide an alarm if the at least one object path is not normal (p. 26, first paragraph under section 5.1 and first two paragraphs under section 5.2: "Mark[ing] for investigation": is a way of alarming a user to the fact that an object path is not normal.).

In regards to claim 14, The system of claim 11, wherein the one or more defined normal and/or abnormal object path feature models comprise one or more defined threatening, i.e., unusual, and/or non-threatening, i.e., common, object path feature models based on one or more characteristics associated with threatening object paths, and further wherein the computer apparatus is operable to compare object path data to the one or more defined threatening and/or non-threatening object path feature models

for use in determining whether the at least one object path indicates occurrence of a threatening event (p. 26, first paragraph under section 5.1 and first two paragraphs under section 5.2).

In regards to claim 15, The system of claim 14, wherein the computer apparatus is further operable to: provide object path data representative of a plurality of object paths corresponding to a plurality of moving objects in the search area over a period of time (Figure 2); group the plurality of object paths into one or more clusters based on the commonality of one or more characteristics thereof (Figure6, bottom left; p. 27, second and third full paragraphs); and identify the one or more clusters as normal object path clusters comprising a plurality of object paths representative of normal object paths of moving objects in the search area or clusters comprising a single object path or a smaller number of object paths relative to the number of object paths in the normal object path clusters (p. 28, second full paragraph: By placing clusters into a hierarchy common, or normal, object paths are identified.).

In regards to claim 16, The system of claim 15, wherein the computer apparatus is further operable to use the object path data representative of an object path in a cluster comprising a single object path or a cluster comprising a smaller number of object paths relative to the number of object paths in the normal object path clusters to define one or more defined normal and/or abnormal object path feature models (p. 28, second full paragraph; p. 26, first paragraph under section 5.1 and first two paragraphs under section 5.2).

In regards to claim 17, The system of claim 15, wherein the computer apparatus further is operable to identify the one or more clusters as non-threatening object path clusters comprising a plurality of object paths representative of non-threatening object paths of moving objects in the search area or clusters comprising a single object path or a smaller number of object paths relative to the number of object paths in the non-threatening object path clusters, and further wherein the computer apparatus is operable to determine whether any of the clusters comprising single object paths or the smaller number of object paths relative to the number of object paths in the non-threatening object path clusters are to be used to define one or more defined threatening and/or non-threatening object path feature models for use in determining whether an object path indicates occurrence of a threatening event (p. 28, second full paragraph; p. 26, first paragraph under section 5.1 and first two paragraphs under section 5.2).

In regards to claim 18, The system of claim 11, wherein the system further comprises: a plurality of imaging devices to cover an entire defined search area, wherein each field of view of each imaging device comprises a field of view portion which overlaps with at least one other field of view of another imaging device (p. 24, first three paragraphs under section 3); wherein the computer apparatus is operable to: fuse image data from the plurality of imaging devices into a single image (p. 24, final paragraph); segment foreground information of the fused image data from background information of the fused image data (p. 23, second full paragraph in the right column); and use the foreground information to provide object path data representative of at least

one object path of one or more moving objects in the search area (p. 23, second full paragraph in the right column).

In regards to claim 19, The system of claim 11, wherein the computer apparatus is operable to recognize at least one object path tracked in the search area and calculate one or more features associated with the at least one object path (p. 23, final paragraph).

In regards to claims 1 – 7, 9 and 10, claims 1 – 7, 9 and 10 are rejected for the same reasons as claims 11 – 17, 19 and 20 (respectively). The argument analogous to that presented above for claims 11 – 17, 19 and 20 is applicable to claims 1 – 7, 9 and 10.

In regards to claim 8, The method of claim 1, wherein the moving object is one of a person or vehicle (p. 24, first full paragraph in the right column).

In regards to claim 20, claim 20 is rejected for the same reasons as claim 15. The argument analogous to that presented above for claim 15 is applicable to claim 20.

In regards to claim 21 and 22, claims 21 and 22 are rejected for the same reasons as claim 17. The argument analogous to that presented above for claim 17 is applicable to claims 21 and 22.

In regards to claim 23, claim 23 is rejected for the same reasons as claim 1. The argument analogous to that presented above for claim 1 is applicable to claim 23.

In regards to claim 25, A system for use in monitoring a moving object in a search area, wherein the system comprises: a plurality of imaging devices positioned to provide image data covering a defined search area, wherein each field of view of each

imaging device comprises a field of view portion which overlaps with at least one other field of view of another imaging device (p. 24, first three paragraphs under section 3); means for fusing all the image data from the plurality of imaging devices into a single image (p. 24, final paragraph); means for segmenting foreground information of the fused image data from background information of the fused image data (p. 23, second full paragraph in the right column); means for using the foreground information to provide object path data representative of at least one object path of one or more moving objects in the search area (p. 23, second full paragraph in the right column); means for recognizing one or more defined non-threatening and/or threatening object path feature models based on one or more characteristics associated with non-threatening and/or threatening object paths of moving objects in the search area (p. 26, first paragraph under section 5.1 and first two paragraphs under section 5.2); and means for comparing the object path data to the one or more defined non-threatening and/or threatening object path feature models for use in determining whether the at least one object path is indicative of a threatening event (p. 26, first paragraph under section 5.1 and first two paragraphs under section 5.2).

In regards to claim 24, claim 24 is rejected for the same reasons as claim 25. The argument analogous to that presented above for claim 25 is applicable to claim 24.
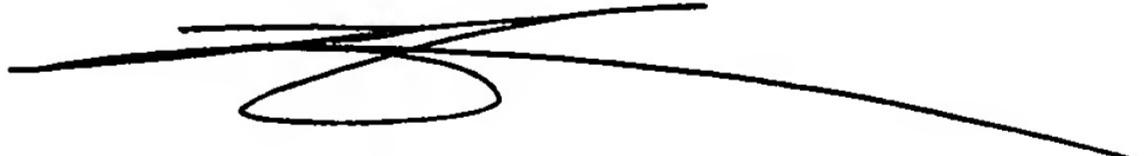
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher L Lavin whose telephone number is 703-306-4220. The examiner can normally be reached on M - F (8:30 - 5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh M. Mehta can be reached on (703) 308-5246. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CLL

BRIAN WERNER
PRIMARY EXAMINER